

# UNITED STATES PATENT OFFICE

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FLASH-REDUCING AGENT FOR SMOKELESS POWDERS

No Drawing.

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(GRANTED UNDER THE ACT OF MARCH 3, 1883, AS AMENDED APRIL 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

proportions and the ingredients may be varied within wide limits.

By special resin, as used in the appended claims, is meant colophony resin, coumarone resins and resinous substances derived from coal tar.

I claim:

1. A nitroglycerine free propellant including nitrocellulose and colophony resin.

2. A nitroglycerine free propellant including nitrocellulose and a 10% or less of colophony resin.

WILLIAM T. INGRAHAM.

The subject of this invention is a flash reducing agent for smokeless powders.

The primary object of my invention is the provision of a material which may be incorporated into propellant powder, especially smokeless powder, for reducing the flash.

With the foregoing and other objects in view, my invention resides in the novel arrangement and combination of ingredients and in the details of preparation hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

Heretofore considerable difficulty has been experienced in reducing the flash of the so-called smokeless powders. Since the efficacy of these powders depends in no small degree upon their being flashless as well as smokeless, it is very desirable that some flash reducing agent be obtained which may freely be incorporated into these powders without in any way altering their ballistic qualities.

I have found that by incorporating such organic materials as rosin (colophony), coumarone resins, or, in fact, any resinous substance derived from coal tar in propellants made of smokeless powders that the flash will be greatly reduced and that this reduction of flash is a function of the propellant whether the same be used for cannon or small arms.

In tests conducted at night both with 75 mm. guns and with small arms, it has been found that smokeless powder containing from 5% to 10% of rosin or resinous material incorporated during manufacture gave a discharge in which the flash was very much reduced.

While propellants in which 5% to 10% of the resinous materials was incorporated appear to give the best results, it is by no means intended to limit my invention to a composition in which the ingredients are incorporated in the proportions given above as the

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